CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 :2005

T-2377

Job No.: CTCE/BBMP/W.No.08/NVR/CSR-03/291j/CEMENT/2016-17 Date: 09.03.2017

TEST REPORT ON CEMENT

* Customer	:	**Asst. Executive Engineer**, Kodigehalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. N. Venkata Reddy,** #92, 7th Main Road, 4th Cross, J.C. Nagara, Mahalakshmipuram (P), Bangalore - 560 086.
* Name of Work	:	Provision of Rain water Harvesting units in Ward No.08, Kodigehalli, BBMP, Bangalore.
* Reference	:	AEE/KH/QC/PR/201/2016-17 Dated: 08.03.2017
* Sample ID	:	Cement
Sample Received on	:	08.03.2017
Period of Testing	:	08.03.2017 to 09.03.2017

The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988 (RA-2014)	29.00 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	145 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988 (RA-2014)	480 Minutes	Not More than 600 Minutes
3	Soundness by Le Chartlier Method	IS-4031 (Part-3) 1988 (RA-2014)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

Civil-Tech Consultants & Engineers Bangalore

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Job No.: CTCE/BBMP/W.No.08/NVR/CSR-03/291j/SAND-Gradation/2016-17 09.03.2017

TEST REPORT ON SIEVE ANALYSIS OF FINE AGGREGATES

* Customer	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. N. Venkata Reddy,** #92, 7th Main Road, 4th Cross, J.C. Nagara, Mahalakshmipuram (P), Bangalore - 560 086.
* Name of Work	:	Provision of Rain water Harvesting units in Ward No.08, Kodigehalli, BBMP, Bangalore.
* Reference	:	AEE/KH/QC/PR/201/2016-17 Dated: 08.03.2017
* Sample ID	:	Fine Aggregates
Technical Reference	:	IS : 2386 (Part 1) - 1963 (RA-2011)
Sample Received On	:	08.03.2017
Date of Testing	:	09.03.2017

Total Wt. of Aggregates in gms = **1000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2011)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	95.20	90-100	90-100	90-100	95-100
2.36	75.20	60-95	75-100	85-100	95-100
1.18	52.70	30-70	55-90	75-100	90-100
600 Micron	30.10	15-34	35-59	60-79	80-100
300 Micron	17.20	5-20	8-30	12-40	15-50
150 Micron	5.70	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative

Remarks : This sample is under Zone-I specific limits.

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Job No.: CTCE/BBMP/W.No.08/NVR/CSR-03/291j/AGG/GR/2016-17 09.03.2017

TEST REPORT ON SIEVE ANALYSIS OF COARSE AGGREGATES

* Customer	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. N. Venkata Reddy,** #92, 7th Main Road, 4th Cross, J.C. Nagara, Mahalakshmipuram (P), Bangalore - 560 086.
* Name of Work	:	Provision of Rain water Harvesting units in Ward No.08, Kodigehalli, BBMP, Bangalore.
* Reference	:	AEE/KH/QC/PR/201/2016-17 Dated: 08.03.2017
* Sample ID	:	Coarse Aggregates (40mm)
Technical Reference	:	IS : 2386 (Part 1) -1963 (RA-2011)
Sample Received on	:	08.03.2017
Date of Testing	:	09.03.2017

Total Wt. of Aggregates in gms= **5000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2011)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	96.22	95-100	85-100
20	36.22	30-70	0-20
10	15.82	10-35	0-5
4.75	3.86	0-5	-

* Information is furnished by the Customer/Representative

Remarks : This sample is under graded specific limits.

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TEST REPORT ON SIEVE ANALYSIS OF COARSE AGGREGATES

* Customer	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. N. Venkata Reddy,** #92, 7th Main Road, 4th Cross, J.C. Nagara, Mahalakshmipuram (P), Bangalore - 560 086.
* Name of Work	:	Provision of Rain water Harvesting units in Ward No.08, Kodigehalli, BBMP, Bangalore.
* Reference	:	AEE/KH/QC/PR/201/2016-17 Dated: 08.03.2017
* Sample ID	:	Coarse Aggregates (20mm)
Technical Reference	:	IS : 2386 (Part 1) -1963(RA-2011)
Sample Received on	:	08.03.2017
Date of Testing	:	09.03.2017

Total Wt. of Aggregates in gms= **5000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS :383-1970 (RA- 2011)	
		Graded	Single Sized
40	100	100	100
20	96.02	95-100	85-100
10	40.02	25-55	0-20
4.75	6.12	0-10	0-5

* Information is furnished by the Customer/Representative

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Job No.: CTCE/BBMP/W.No.08/NVR/CSR-03/291j/AGG/GR/2016-17 09.03.2017

TEST REPORT ON SIEVE ANALYSIS OF COARSE AGGREGATES

* Customer	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. N. Venkata Reddy,** #92, 7th Main Road, 4th Cross, J.C. Nagara, Mahalakshmipuram (P), Bangalore - 560 086.
* Name of Work	:	Provision of Rain water Harvesting units in Ward No.08, Kodigehalli, BBMP, Bangalore.
* Reference	:	AEE/KH/QC/PR/201/2016-17 Dated: 08.03.2017
* Sample ID	:	Coarse Aggregates (12.5mm)
Technical Reference	:	IS : 2386 (Part 1) -1963 (RA-2011)
Sample Received on	:	08.03.2017
Date of Testing	:	09.03.2017

Total Wt. of Aggregates in gms= **5000**

IS Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS :383-1970 (RA- 2011)	
		Graded	Single Sized
20	100	100	-
16	100	-	100
12.5	96.64	90-100	85-100
10	43.60	40-85	0-45
4.75	5.10	0-10	0-10

* Information is furnished by the Customer/Representative

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Job No.: CTCE/BBMP/W.No.08/NVR/CSR-03/291j/CC Solid Block/2016-17 13.03.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF SOLID CONCRETE BLOCKS

*** Customer**	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
*** Agency**	:	**Mr. N. Venkata Reddy,** #92, 7th Main Road, 4th Cross, J.C. Nagara, Mahalakshmipuram (P), Bangalore - 560 086.
*** Name of Work**	:	Provision of Rain water Harvesting units in Ward No.08, Kodigehalli, BBMP, Bangalore.
*** Reference**	:	AEE/KH/QC/PR/201/2016-17 Dated: 08.03.2017
Technical Reference	:	IS: 2185 (Part-1) - 2005 (RA-2010)
Size of Blocks	:	400mm x 200mm x 200mm
Cross Sectional Area	:	80000 mm^2
No. of Blocks Tested	:	08
Sample Received on	:	10.03.2017
Date of Testing	:	13.03.2017

Sl.No.	Block ID	Wt. in Kg	Failure load (KN)	Compressive strength (N/mm^2)	Requirement as per IS: 2185 (Part-1) - 2005 (RA-2010)
1	Block 1	35.25	286.3	3.58	Minimum required Compressive Strength of Individual Units 3.20 N/mm^2
2	Block 2	36.35	283.6	3.55	
3	Block 3	36.90	280.7	3.51	
4	Block 4	36.32	282.5	3.53	
5	Block 5	35.19	283.4	3.54	
6	Block 6	34.65	285.5	3.57	
7	Block 7	35.62	287.2	3.59	
8	Block 8	36.85	285.6	3.57	

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Job No.: CTCE/BBMP/W.No.08/NVR/CSR-03/291j/Kerb stone/2016-17 15.03.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CORE

* Customer	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. N. Venkata Reddy,** #92, 7th Main Road, 4th Cross, J.C. Nagara, Mahalakshmipuram (P), Bangalore - 560 086.
* Name of sub work	:	Providing of Rain water Harvesting units in Ward No.08, Kodigehalli, BBMP, Bangalore.
* Reference	:	AEE/KH/QC/PR/201/2016-17 Dated: 08.03.2017
* Sample ID	:	Kerb stone
* Grade of Concrete	:	M_{15}
Techinical Reference	:	IS:516-1959 (RA- 2013), SP-24:1983.
Sample Received on	:	10.03.2017
Date of Testing	:	15.03.2017

Sl. No	Dia of Core D (mm)	Height of Core H (mm)	Core Wt (Kg)	Density of Core (kg / m^3)	H / D	Correction factor (Based on H/D)	Failure Load (kN)	Core Strength (N/mm^2)	Correction Factor for the Dia. (Strength of the Core x 1.08)	Corrected Cylinder Compressive Strength (N/mm^2)	Equivalent Cube Compressive Strength (N/mm^2)
1	50.00	78.00	0.386	2520.36	1.56	0.952	23.45	11.94	12.90	13.54	16.93
2	50.00	80.00	0.399	2540.11	1.60	0.957	26.35	13.42	14.49	13.87	17.33
3	50.00	79.00	0.392	2527.14	1.58	0.955	25.95	13.22	14.27	13.63	17.03

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Job No.: CTCE/BBMP/W.No.08/NVR/CSR-03/291j/Cube/2016-17 17.04.2017

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

* Customer	:	**Asst. Executive Engineer,** Kodigehalli Sub Division, BBMP, Bangalore.
* Agency	:	**Mr. N. Venkata Reddy,** #92, 7th Main Road, 4th Cross, J.C. Nagara, Mahalakshmipuram (P), Bangalore - 560 086.
* Name of the work	:	Providing of Rain water Harvesting units in Ward No.08, Kodigehalli, BBMP, Bangalore.
* Reference	:	AEE/KH/QC/PR/201/2016-17 Dated: 08.03.2017
* Sample ID	:	Cement Concrete
Technical Reference	:	IS: 516-1959 (RA-2013)
Size of cubes	:	150mmx150mmx150mm
Cross Sectional Area	:	22500 mm^2
* Grade of Concrete	:	M_{15}
Compressive Strength as on	:	28^{th} day
Sample Received on	:	17.04.2017

Sl.No.	Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm^2)
1	20.03.2017	17.04.2017	8.168	365.9	16.26
2	20.03.2017	17.04.2017	8.290	382.7	17.01
3	20.03.2017	17.04.2017	8.382	393.8	17.50

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